

Notice of Allowability

Application No.

10/723,488

Applicant(s)

SUTTON ET AL.

Examiner

Michael Bernshteyn

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1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 04/27/2007.
2. ☒ The allowed claim(s) is/are 82-121.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Michael M. Bernshteyn
Patent Examiner
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DETAILED ACTION

1. This Office Action is a response to the remarks filed on April 27, 2007. No claims have been amended, cancelled or added.
2. In view of the remarks, the rejection of claims 82-121 under the judicially created doctrine of obviousness-type double patenting over claims 1-48 of U. S. Patent 6,677,422 in view of Dankworth et al. (U. S. Patent 5,650,536) and E Bruce Nauman ("Chemical Reactor Design, Optimization, and Scaleup", McGraw-Hill, 2002), the rejection of claims 82-103 and 105-121 under 35 U.S.C. 103(a) as being unpatentable as obvious over Coca et al. in view of Dankworth et al. and E Bruce Nauman, and the rejection of claim 104 under 35 U.S.C. 103(a) as being unpatentable over Coca and Dankworth as applied to claims 82-103, and 105-121 above, and further in view of Jarvis et al. (U.S. Patent 4,728,701) have been withdrawn.
3. Claims 82-121 are now active.

Allowable Subject Matter

4. Claims 82-121 are allowed.
5. The following is a statement of reasons for the indication of allowable subject matter: the present claims are allowable over the closest reference: Coca et al. (U. S. Patent 6,677,422).

Coca discloses a method of making a copolymer composition containing a copolymer, which includes the steps of (a) providing a donor monomer composition that includes an isobutylene type monomer; (b) mixing the donor monomer composition with

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an ethylenically unsaturated monomer composition that includes one or more ethylenically unsaturated acceptor monomers, and is substantially free of maleate type monomers and fumarate type monomers, and (c) polymerizing the mixture resulting from step (b) in the presence of a free radical polymerization initiator. The polymerization is carried out in the substantial absence of Lewis acid and/or transition metals (abstract). Coca discloses a donor monomer composition that includes an isobutylene type monomer (formula I), ethylenically unsaturated acceptor monomer (formula III), ethylenically unsaturated monomers (formula IV) in claims 1, 6 and 19.

Coca discloses all substitute groups in formulas I, III and IV (col. 35, lines 3-14, col.35, lines 48-67 and col. 37, lines 1-17), the functional groups incorporated into the copolymer (col. 36, lines 11-16), the initiator (col. 36, lines 17-23), the azo compound (col. 36, lines 31-43), the ethylenically unsaturated acceptor monomer (col. 36, lines 44-51), the sequence of steps in the method of claim 1 (col. 36, lines 53-67), etc. Furthermore, by the virtue of copolymerization of two monomers with different activity towards each other, as in Coca, the alternating copolymers of isobutylene type monomers are inherently formed.

Coca discloses the instantly claimed STR for making such copolymers (examples 1-A through 8-EE, col. 13, line 18 through col. 30 line 34) with using of stirred stainless steel pressure reactor, which was then pressured with nitrogen providing a 5 psig pad on the reactors, mixed and polymerized of charges 1-3 (col. 13, lines 35-38, col. 14, lines 13-15, col. 14, lines 50-53, col. 15, lines 21-23, etc.). The ethylenically unsaturated monomers composition and the free radical polymerization initiator are separately and

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simultaneously added to and mixed with the donor monomer composition (col.9, lines 12-15), the unreacted portion of the monomer of structure (I) is substantially removed from the resulting copolymer composition by evaporation (col. 9, lines 66-67 and col. 10, lines 1-2). Coca discloses that after polymerization any unreacted monomer of structure (I) is substantially removed from the resulting copolymer composition by evaporation (col. 36, lines 57-60).

Coca does not disclose maintaining the liquid level in the STR such that there is substantially no air or vapor space in the reactor (82d), and maintaining the monomer compositions and initiator compositions in the STR for residence time sufficient to effect conversion of the monomers to a copolymer composition (82e), and discharging the copolymer composition by way of the outlet; wherein the monomers and initiators are introduced to the STR at essentially the same rate as the copolymer is withdrawn from the STR (82f).

However, Coca does not disclose or fairly suggest the maintaining the liquid level in the STR such that there is substantially no air or vapor space in the reactor (82d), and maintaining the monomer compositions and initiator compositions in the STR for residence time sufficient to effect conversion of the monomers to a copolymer composition (82e), and discharging the copolymer composition by way of the outlet; wherein the monomers and initiators are introduced to the STR at essentially the same rate as the copolymer is withdrawn from the STR (82f) as per instant claim 82.

6. As of the date of this Notice of Allowability, the Examiner has not located or identified any reference that can be used singularly or in combination with another

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reference including Coca et al. to render the present invention anticipated or obvious to one of ordinary skill in the art.

7. In the light of the above discussion, it is evident as to why the present claims are patentable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delay, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reason for Allowance".

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Bernshteyn whose telephone number is 571-272-2411. The examiner can normally be reached on M-F 8-5:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael Bernshteyn
Patent Examiner
Art Unit 1713

MB
08/20/2007


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